

HANDBOOK OF PHONOLOGICAL DATA
FROM A SAMPLE OF THE WORLD'S LANGUAGES

A Report of the Stanford Phonology Archive

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885 Paez	885 Paez	885 Paez
885 01 p [p-aspirated] ⁶⁰	(free) [d/z-prenasalized] ⁶⁵ (free)	65
885 02 b-prenasalized [p-prenasalized-aspirated] ⁶¹ (free)	16 s-hacek	51 i [iota] ⁷¹ (free)
885 03 t [t-aspirated] ⁶⁰	17 s-hacek-palatalized ⁰² [z-hacek-palatalized] ⁶⁶	52 i-nasalized [iota-nasalized] ⁷¹ (free)
885 04 t-palatalized ⁰¹ [t-aspirated-palatalized] ⁶² [t/c-fricative] ³⁰ (free)	18 z-hacek-prenasalized [t/s-hacek-prenasalized-aspirated] ⁶⁵ (free) [d/z-hacek-prenasalized] ⁶⁵	53 epsilon [e] ⁷²
885 05 d-prenasalized [t-prenasalized-aspirated] ⁶¹ (free)	19 c-fricative-palatalized ⁰³	54 epsilon-nasalized [e-nasalized] ⁷²
885 06 d-prenasalized-palatalized [t-prenasalized-aspirated-palatalized] ⁶¹ (free) [d/j-fricative-prenasalized] ³⁰ (free)	21 gamma	55 a [schwa] ⁷³ (free)
885 07 k [k-aspirated] ⁶⁰	22 m [m-voiceless] ⁶⁷ (free) [m-syllabic] ⁶⁸	56 a-nasalized [schwa-nasalized] ⁷³ (free)
885 08 g-prenasalized [k-prenasalized-aspirated] ⁶¹ (free)	23 n [n-voiceless] ⁶⁷ (free) [n-syllabic] ⁶⁸	57 u [upsilon] ⁷⁴ (free) [o] ⁷⁴ (free)
885 10 t/s [t/s-aspirated] ⁶⁰	24 n-palatal [n-palatal-voiceless] ⁶⁷ (free)	58 u-nasalized [o-nasalized] ⁷⁴
885 11 t/s-hacek [t/s-hacek-aspirated] ⁶⁰	25 l-flap ⁰⁴	59 yod [yod-voiceless] ⁷⁵ [i-lax] ⁷⁶ (free) [yod-nasalized] ⁷⁵
885 12 phi-palatalized [phi] ⁶³	26 l-flap-palatalized ⁰⁴ [l-flap-voiceless-palatalized] ⁶⁹ (free)	60 w [w-voiceless] ⁷⁷ (allo, free)
885 13 beta [b] ⁶⁴	27 r-flap ³¹ (loan)	61 schwa-over-short ⁷⁸ (transitional)
885 14 s	28 glottal stop	63 i-over-short ⁸⁰ (transitional)
885 15 z-prenasalized [t/s-prenasalized-aspirated]	29 h [x] ⁷⁰ (allo, free)	
885 \$a Paez \$d Paezan \$e S Colombia (Cauca) \$f 40,000 (see Gerdel) \$g Merritt Ruhlen \$h Jim Lorentz (review) \$i John Crothers (editor)		
885 \$a Gerdel, Florence \$b 1973 \$c Paez phonemics \$d Linguistics 104.28-48. \$e informant \$f "based primarily on the speech of" one informant (p.28) \$g over a period of 5 years		
885 \$a ASPIRATED STOPS \$A All voiceless stops and affricates have aspirated allophones finally and before voiceless consonants. This type of aspiration, or voiceless release (p.32), contrasts with a cluster of the same consonant followed by /h/. Such clusters include /p, t, k/ plus /h/. (/m, n/ also cluster with a following /h/.) Gerdel treats these as clusters rather than as unit phonemes with aspiration because there are many other consonant clusters, and because in medial position following a short vowel there is a syllable break between a voiceless stop and following /h/. (p.33) On the other hand there is no such syllable break following a long vowel. Further, clusters with /h/ do not manifest the characteristic transitional vowel of consonant clusters. (p.40) The evidence for the cluster interpretation is thus not clear cut.		
885 \$a CONSONANTS \$a VOWEL CLUSTERS \$A Gerdel views the prenasalized alveolar and palatal fricative		

allophones as being basic. However a reasonable case could be made for taking the voiced affricates as basic. This would create a distinctive series of voiced affricates, corresponding to the voiced stops, and would of course deplete the voiced fricative series. [JL] \$A The consonants /b-prenasalized, d-prenasalized, d-prenasalized-palatalized, g-prenasalized, z-prenasalized, z-hacek-prenasalized/ are considered unit phonemes rather than phonemic sequences of nasal plus consonant. Gerdel gives several reasons: The above consonants "...always occur with (lenis) homorganic nasal onset.... In any position the lenis character of the nasal onset contrasts with the relatively fortis character of a nasal consonant plus consonant.... Furthermore, in word medial position a sequence of nasal plus consonant may be separated by syllable division and an optional transition vocoid...whereas these do not occur within the complex unit of a prenasalized stop or fricative." (p.30) \$A The consonants /t-palatalized, d-prenasalized-palatalized, phi-palatalized, s-hacek-palatalized, z-hacek-palatalized, c-fricative-palatalized, n-palatalized, l-flap-palatalized/ are considered unit phonemes rather than phonemic sequences of consonant plus /yod/. Gerdel gives several reasons: "(1) Each of the above sounds occurs as a unit, with palatalization either simultaneous or occurring as a very close offglide with the utterance of the primary sound.... (2) Those (palatalized) sounds which may be followed by [l]...retain the palatalization in that environment." (p.31) Thus, the articulation of the above consonants contrasts with sounds which Gerdel analyzes as consisting of a consonant plus /yod/. Gerdel also points out the various ways in which these palatalized unit phonemes contrast in distribution with sequences of consonant plus /yod/. See p.31-32 of the source. \$A The affricates /t/s, t/s-hacek/ are "...listed as phonetically complex unit phonemes, principally on the basis of their distribution which is identical with that of single unit voiceless stops." (p.32) \$A Gerdel analyzes all clusters of /glottal stop.consonant/ as phoneme sequences rather than as unit phonemes. \$A "Identical vowel clusters, such as [epsilon.epsilon] are considered to be phonemic sequences of two vowels because of contrasting stress patterns and potential syllable division." (p.33) Also, "vowels with nonphonemic lengthening occur as an intonational feature indicating special emphasis or as lengthening of the stressed vowel of a borrowed word." (p.33-34)

- 885 \$a CREAKY VOICE VOWELS (NON-DISTINCTIVE) \$A "Light laryngealization of the vowel occasionally occurs before the glottal closure." (p.42)
- 885 \$a NASAL VOWEL PROSODY \$A "Nasalization of surrounding vowels is optional in phonological words other than those beginning with a disyllabic stem in which the first vowel is basically nasal and the second vowel is basically oral." (p.47)
- 885 \$a OVER-SHORT VOWELS (NON-DISTINCTIVE) \$A "After a sequence of /V.glottal stop/ word medially, a short very lenis V of the same timbre as the preceding V optionally follows the glottal closure." (p.41) "After a sequence of /stressed-nasalized-vowel.glottal stop/, ...there is slight prenasalization of the succeeding syllable." (p.42)
- 885 \$a PHONOLOGICAL WORD \$A "Consonant clusters are a notable feature of Paez.... It is interesting to note that on the morphological level, stems which end with one or more consonants take certain suffixes beginning with a consonant, while stems ending with one or more vowels take the alternate forms of those suffixes, but beginning with a vowel, thereby increasing the number of consonants or of vowels in the respective sequences." (p.44) The ratio of single consonants to consonant clusters is about 2 to 1. (p.44) "Polysyllabic sequences of from two to six consonants result when a syllable ending in one, two, or three consonants is juxtaposed to a syllable beginning with one, two, or three consonants.... In sequences of from four to six consonants, the first member is limited to "/h/ (or) /glottal stop/." "Clusters of up to five vowels occur with no apparent restriction." (p.46)
- 885 \$a STRESS \$A Word "stress is contrastive and is normally accompanied by high pitch." (p.42) It seems to be lexically determined; examples show stress on almost any syllable, with one stress per word. \$A "The phonological phrase is characterized by one major stress of greater intensity than phonological word stress and by potential pause.... An intonational shift of emphasis modifies the position of the phrase stress." (p.47)
- 885 \$a SYLLABLE \$A (C)(C)(C)V(C)(C)(C) \$A The glides /w/ and /yod/ are considered consonants for the purpose of defining canonical form. \$A The consonant clusters themselves may be realized phonetically as sequences of separate syllables which arise either through syllabification of nasals or /yod/ or by insertion of a "transition vocoid" between consonants. (p.43) \$A "In a sequence of two consonants in word medial position, syllable division usually occurs between consonants. However, syllable division occurs before the first consonant...when the sequence /Cx/ is preceded by two identical vowels" (p.43) and before certain monomorphemic sequences. "In a sequence of three consonants in word medial position, syllable division usually occurs between the first and second consonants." (p.43) See source for further restrictions, wherein syllable division falls between the second and third consonants.
- 885 \$a VOICELESS VOWELS (NON-DISTINCTIVE) \$A "After a sequence of /V.glottal stop/ utterance finally, a voiceless vowel of the same timbre as the preceding vowel follows the glottal closure." (p.41)
- 885 01 \$A "While in the principal informant's idelect the sound [t-palatalized/] is articulated slightly farther back in the palatal position, it is described in this paper as a palatalized

alveolar, the more general pronunciation." (p.36)

- 885 02 \$A /s-hacek-palatalized/ "may at times be articulated with the tongue tip slightly retroflexed. In rapid speech the sound then approaches the quality of a vibrant or trill...." (p.39)
- 885 03 \$A /c-fricative-palatalized/, written by Gerdel as [x] with a [yod] superscript, is classified with the velars and glottals (p.35) but described as "palatal." (p.36)
- 885 04 \$A The laterals are described as flaps "with lateral release." (p.36)
- 885 30 \$A The [yod] off-slide of /t-palatalized/ and /d-prenasalized-palatalized/ may be realized as a homorganic (palatal) raised fricative.
- 885 31 \$A "Ordinarily the alveolar flap 'r' of Spanish loan words becomes /l-flap/ or /l-flap-palatalized/ in Paez." (p.36)
- 885 60 \$A Plain voiceless stops and affricates are aspirated in phrase (utterance) final position and before voiceless consonants. (p.33, 40) (See also rule 78.)
- 885 61 \$A The stop portion of a prenasalized stop may be devoiced and lightly aspirated phrase finally or before a voiceless consonant. (p.38)
- 885 62 \$A The [yod] off-slide of /t-palatalized/ is devoiced (i.e. aspirated) phrase finally and before voiceless consonants.
- 885 63 \$A /phi-palatalized/ loses its palatalization before a high front vowel. (p.38)
- 885 64 \$A /beta/ is realized as [b] after a voiced bilabial stop and bilabial nasal. (p.38)
- 885 65 \$A /z-prenasalized/ and /z-hacek-prenasalized/ may be realized as the corresponding voiced prenasalized affricates word-initially, and as the corresponding voiceless aspirated prenasalized affricates phrase-finally and before voiceless consonants.
- 885 66 \$A /s-hacek-palatalized/ is voiced after voiced continuants. (p.39)
- 885 67 \$A Nasals may be devoiced phrase finally after /h/ and word initially before /h/. It is unclear how clusters of nasal plus /h/ are pronounced when there is no devoicing of the nasal. Gerdel writes "[h.m]" and "[m.h]" without any explanation. A syllabic nasal would seem to be a possibility. See p.39.
- 885 68 \$A Nasals are syllabic word-initially before consonants.
- 885 69 \$A /l-flap-palatalized/ may be devoiced phrase finally after /glottal stop/.
- 885 70 \$A /h/ is realized as [x] between /k/ and stressed /i/ or /i-nasalized/, and optionally word-initially. (p.38)
- 885 71 \$A /i, i-nasalized/ may be lower-high in unstressed syllables. (p.41)
- 885 72 \$A /epsilon, epsilon-nasalized/ are higher-mid before /c-fricative-palatalized, yod/. (p.41)
- 885 73 \$A "The low central unrounded vowels, /a, a-nasalized/ vary freely with mid central close allophones [schwa, schwa-nasalized] in unstressed syllables in word final position." (p.41)
- 885 74 \$A /u/ varies freely with [upsilon] in unstressed syllables, and /u/ and /u-nasalized/ vary toward higher-mid in stressed syllables. (p.41)
- 885 75 \$A /yod/ is devoiced between a voiceless consonant and a following voiceless consonant or phrase boundary, and is nasalized contiguous to nasal vowels. (p.40)
- 885 76 \$A "A lenis syllabic offglide [i] varies freely with [yod] in the sequences /b-prenasalized.yod, g-prenasalized.yod, beta.yod/ in utterance final position." (p.40)
- 885 77 \$A /w/ is devoiced between /h/ and a following voiceless consonant, and optionally after /h/ phrase (utterance) finally.
- 885 80 \$A "A weak very short voiced vocoid [i-over-short] optionally occurs word medially between any consonant and /yod/." (p.40)